

Environmentally Friendly Sunscreen - An Instructional Design Project

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Abstract: Adults living in Hawai'i are constantly exposed to sunlight. These individuals will therefore need to practice healthy skin care practices to help maintain good skin. However, many of these individuals are unaware of the harmful effects sunscreen can have on ocean life. The purpose of this instructional design project was to develop and evaluate the effectiveness of a curated website for adults living in Hawai'i and their attitudes about the benefits of sustainable sunscreen, as well as the impact on Hawai'i's natural environment. Nineteen adults living in Hawai'i were exposed to a curated website created on Wix to help educate them on safe sunscreen in hopes of making environmentally friendly sunscreen choices in the future. Surveys were provided on Google Forms and collected and analyzed using Google Sheets for grouping and trends. Participants were provided time to explore the website independently or as needed with assistance. The results of the study showed high levels of information learned, and the participants found the topic important and relevant to their lives. Individuals who visit the beach frequently were motivated to make changes in the future to help with ocean preservation.

Introduction

Living in Hawai'i, individuals are in a consistently sunny environment. Daily activities such as running, hiking, visiting with friends and neighbors all involve spending time outdoors, exposed to the sun. In particular, attending the beach is a common activity among friends and family. When partaking in these outdoor activities, individuals need to demonstrate safe skin practices in order to stay healthy. However, there have been significant negative impacts on ocean life, ocean water health, and coral reefs due to chemicals found in commonly used sunscreen. A 2014 study determined that growing human population and activity in the Caribbean and IndoPacific (such as Hawaii and Maldives) also means increase waste water pollution on coral life environment (Staff Writers, 2014). Some people may think of runoff and pesticides as common, harmful chemicals affecting the ocean, but many are unaware of the chemicals found in most sunscreens are negatively impacting the ocean as well. Just as trees are the lungs of the Earth and help maintain air quality, coral helps to maintain healthy ocean quality for the water and fish. Adults living in Hawai'i are the first to see these impacts, both positive and negative, and therefore have a responsibility to take care of Hawai'i's environment. By exposing these individuals to this information, they are then able to help make changes in the future to help with preservation.

The purpose of this instructional design project is to develop and evaluate the effectiveness of a curated website for adults living in Hawai'i and their attitudes about the benefits of sustainable sunscreen and the impact on Hawai'i's natural environment.

Literature Review

Needs and wants vary from person to person, as well as place to place. For people living in Hawai'i, maintaining healthy skin can be seen as a need because of the amount of time they are exposed to the sun. Therefore, buying products to help with this preservation is categorized as a need. However, what is not always noticed is the effects of these products on the natural environment. For example, when these products are carried into the ocean, they run off into ocean life. Downs et al. explained that these products, such as lotion and sunscreen, contain a chemical called benzophenone-2 (BP-2) and benzophenone-3 (BP-3) that leads to coral live depletion and eventually to the overall death of coral life (2016). Educating people on the effects and how to make safe changes can make a huge effect on the environment. An online educational environment can provide quick and easy access to these changes for a large number of people, which creates an equally large impact.

When coral die, it often goes through a process of bleaching. This means that the color of the coral has changed from colors such as pink, purple, or brown, to white. When this happens, coral is no longer able to help benefit the ocean and the life that interacts below the ocean's surface. When these chemicals affect more than just humans, it is now the responsibility of humans to make conscious efforts to protect marine life. The products that are creating these problems have been brought in by humans, and therefore, should be fixed by humans (Lara, 2015).

In Hawai'i and the Caribbean, concentrations [of foreign chemicals] were 12 times higher, according to the sea water testing (The Guardian, 2015). With Hawai'i being a heavily trafficked beach environment, people both visiting and living in the state visit the beach and the ocean frequently. In both 2016 and 2017, the state of Hawai'i broke records with around 9 million tourists visited the islands (Murar, 2017; Schenfeld, 2018). This means that there will be an increasingly large number of chemicals that are brought into the ocean on a daily basis (Jhung, 2018).

Due to the frequency of locals and tourists in ocean waters using sunscreens that contain BP-2 and BP-3, attempts have been made to eradicate these impacts. The Sunscreen Bill in Hawai'i in 2017 ("Oxybenzone in the News", 2017), but it was unfortunately not passed as of February 2018. This bill could have helped alleviate harm caused by both residents and visitors. However, this demographic is so large that focusing on a smaller group could find easier results. Therefore, individuals who live on islands can have the opportunity to make long term changes that they will continue to carry out in the future. These are the individuals who will see changes in the water as they continue to live here and swim in the ocean. Therefore, they can make the effort to help preserve the ocean and its life below the surface.

Online learning creates an environment for learners to be at the forefront of their educational experience. Their contribution helps determine their results. Most students participate most of the time... few students are less regular contributors...rarely does a student not participate at all

during an online course (Harasim, 2000). During this time, we have seen the rise of the learning sciences, the expansion of Instructional Design Technologies into many other fields, and the explosion of the Internet and online learning. (West, Thomas, Bodily, Wright, & Borup, 2017). Designing, developing, and implementing was made based on the learners needs and through a fun and simple environment. Analyzing the information given by the learners helped to improve the website. In the drive to increase effectiveness, interest has grown in blended learning, an instructional strategy that combines the use of web-technologies with more traditional approaches, often classroom-based (Adams, 2013).

Project Design

A different kind of educator is called for in distance education; one that is more dynamic, flexible, has real-world experience and can be customer-service oriented (Puzziferro & Shelton, 2009). To appeal to online learners, a curated website was created for learners, with the learner's minds and needs at the forefront. In order to succeed in online environments, long term sustainability and procedures need to be put in place (Chiu & Churchill, 2016). In order to create a successful outcome for the learners, creating and implementing an appealing website is crucial for online learning. Keeping images and information strictly to what is most important keeps the learner focused on the topic so they have an effective learning experience in the long term (Rey, 2014).

John Keller's ARCS Model (David L, 2014) describes four areas of learning that helps motivate and sustain learners during the learning process, including attention, relevance, confidence, and satisfaction. These four areas were the basis for design, implementation, and collection of information for this website and project.

Attention. Attention needs to be gained through the interest of the learners. The target audience involved adult's living in Hawai'i. Therefore, describing a situation that these individuals will often face grabs the learner's attention and keeps them interested. This is a problem they are able to solve through the process of them learning more to help eradicate the problem. The Home and About pages were both made to be simple design with limited text and buttons (Figure 1). The learner is able to get the main focus of the website and it's intended purpose (Figure 2). Once finished reading what will be involved in the continuing pages, they can see how to transition easily from page to page.

Relevance. Visuals that involve locations and areas they might come across shows them that this is interesting and is a part of their life. The pictures were chosen from my own library taken at locations around the different islands along with free photos provided from Wix's library. Additionally, websites provided for the users to explore involved research and action being taken in Hawai'i (Figure 3).

Additionally, users had to be somewhat familiar and comfortable with technology. Each page had a number of options for the users to look over and decide what they felt most inclined to explore (Figure 4). They were motivated to learn through their own interests and personal preference. They were not required to read a certain number of websites, but rather given the freedom to choose what interested them most until they felt they had finished the learning

process. Users were held accountable of their own understanding because of the online learning format and environment.

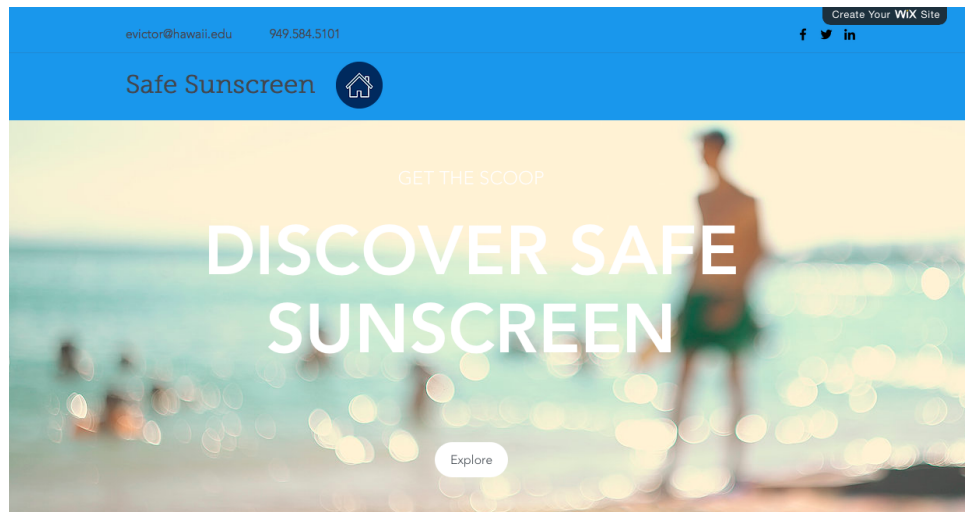


Figure 1. Simplicity and imagery of home page.

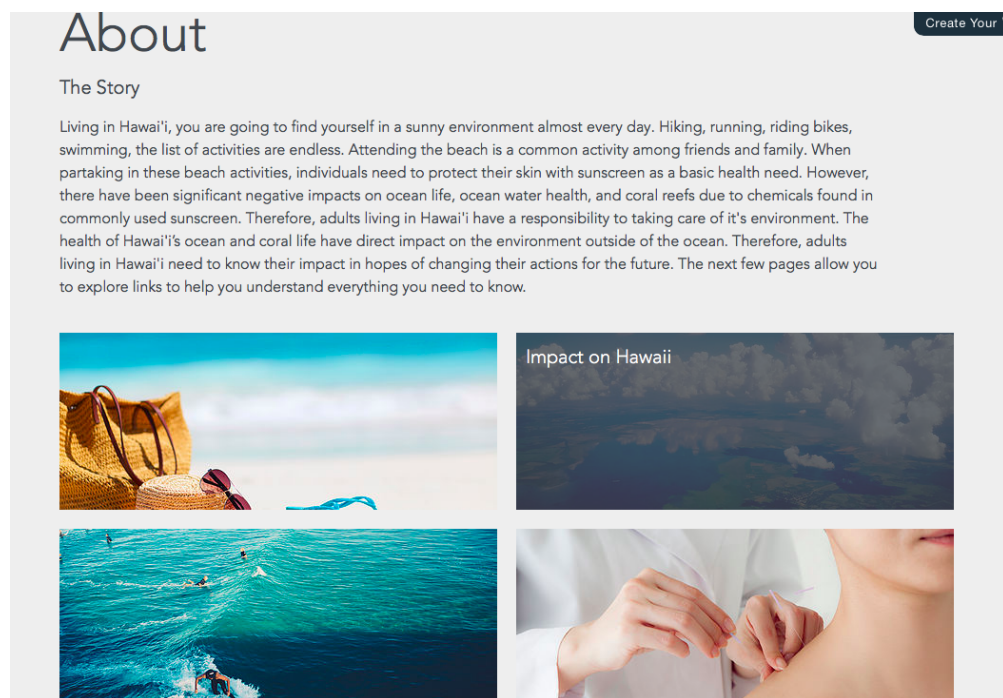


Figure 2. Explanation about curated website and page titles.

Confidence. Learners were held accountable for both their learning and assessment. As mentioned, when navigating through the curated website they had a number of options to maneuver through at their own speed and interest. Their contribution before, during, and after exploring the website helped the designer understand how effective online learning was for the subject at hand. Once they were finished exploring they then had the confidence to choose sunscreen based on the information they had learned on their own.

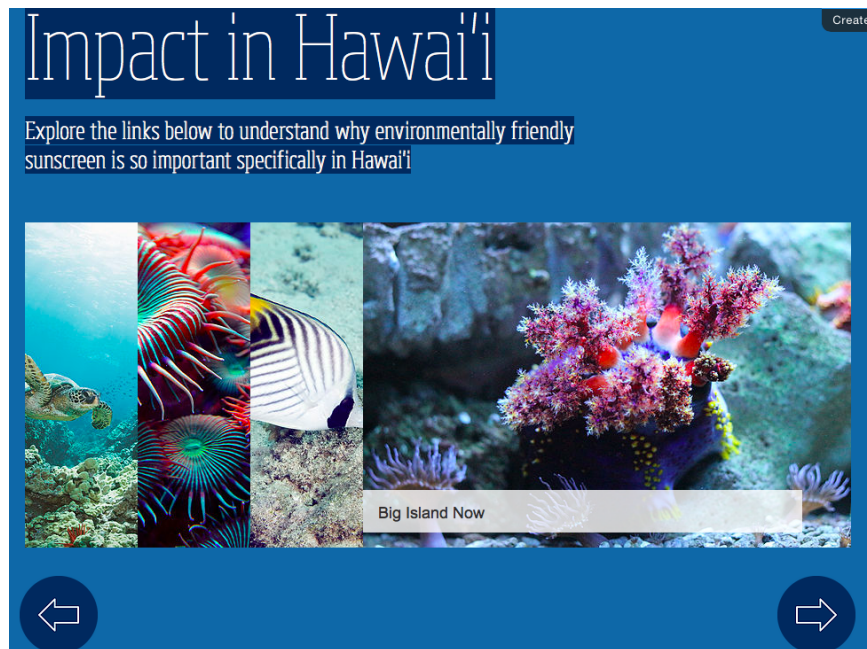


Figure 3. Relevance of Hawai'i articles.

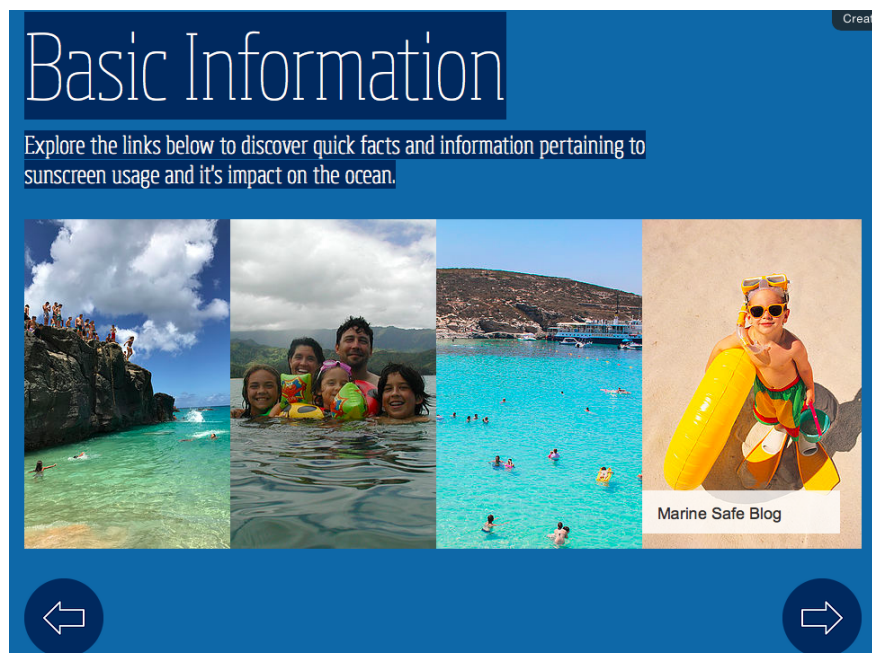


Figure 4. Relevance of Hawai'i location images.

Additionally, when they felt they had questions, there was a comment section (Figure 5) to help provide feedback to the designer to help with confusion. This helped the designer understand what might have made the learners more motivated to learn and interest them in the future on the subject.

Email *

Name *

Subject

Message

Send

Figure 5. Comments section.

Satisfaction. Additionally, the surveys provided before and after exploring the websites helped me receive feedback from the users. Providing an online environment to state opinions creates both an ease of use transition as well as quick-time response. Learners were able to describe what they believed they knew or felt towards a particular part of the websites explanation on the subject in comparison to after exploring the website (Figure 6). This form of collecting data on information learned allows the users to provide their feedback to the website created unbiased. They now are more informed about the topic at hand, and are satisfied in knowing they are making a positive impact on the environment. They were able to describe how they felt prior to exploring the website and after in connection to how much effort they gave exploring the website.

Retrospective Survey

QUESTIONS RESPONSES 19

BEFORE the website educational experience: How serious do you think the issue of environmental sunscreen for ocean preservation is? *

1 2 3 4 5

not serious at all ☐ ☐ ☐ ☐ ☐ very serious

AFTER the website educational experience: How serious do you think the issue of environmental sunscreen for ocean preservation is? *

1 2 3 4 5

not serious at all ☐ ☐ ☐ ☐ ☐ very serious

Do you know the negative impact commonly used sunscreen has on ocean life? *

☐ yes

SEND

Figure 6. Before and after questioning.

Methods

The target population included 17 adults, above the age of 17, currently living in the state of Hawai'i (Table 1). These individuals have a connection to the land of Hawai'i, with fourteen (82%) living on the island of Oahu, two living on the island of Hawai'i (12%), and one (6%)

living on the island of Maui. Eleven individuals (65%) were between the ages of 18-40, while six individuals (35%) were over the age of 40. Of these individuals, five (29%) were male and twelve (71%) were female. Additionally, they have knowledge of basic functions of a computer and exploring different websites. One participant (6%) held a high school diploma, while sixteen (94%) held an Associate's degree or higher. When describing their educational background, they were asked to describe their everyday use and comfortability with technology in educational environments. Overall, adults were both comfortable and avid users of technology in their daily lives. These individuals partook in small group and individual exploration of the website due to their location and availability.

It should be noted that one male individual explored the website and did not feel impacted, and thus was not willing to make changes in his life based on information learned. He explained that he visited the beach on a weekly basis, and used sunscreen frequently. However, he was comfortable with the sunscreen he had always used and was not interested in making changes at this time. He also answered that he understood the importance and relevance of environmentally friendly sunscreen (EFS) but would not use it despite this knowledge. Therefore, his data was removed from the analysis so that it would not skew the data.

Table 1. Participant age, sex, residence, and education level where n=17

Characteristics	Number of Students	Percentage
<i>Age</i>		
18-40	11	64.7%
41+	6	35.2%
<i>Sex</i>		
Male	5	29.4%
Female	12	70.6%
<i>Residence</i>		
Oahu	14	82.4%
Hawai'i	2	11.8%
Maui	1	5.9%
<i>Education Level</i>		
High School Diploma	1	5.9%
Associate's Degree	1	5.9%
Bachelor's Degree	8	47.1%
Master's Degree	6	35.3%
Doctorate Degree	1	5.9%

Prior to individual and group sessions, online recruitment letters were sent to explain the purpose and what to expect during their participation. This letter was connected to an email to help users reference the parts of the project they needed to complete and in what order. Individuals understood that the participation was voluntary, confidential, and without monetary incentives. After reading the letter, they were then asked to complete a consent form (Appendix A) and demographic survey (Appendix B).

The consent form was filled out on a Google Form and signed electronically. Once completed, they began the demographic survey (Appendix B) at their own pace. The survey determined basic demographic information about the individuals, listed their outdoor and personal health habits, and described their attitudes towards individual choices made when impacting the environment.

Participants were then asked to explore the curated website, created on Wix.com, at their own leisure. Individuals who were part of the one on one sessions were left alone until they determined they were completed to continue with the activity. The participants were not required to stay on the website for a determined amount of time, though encouraged to explore for 45 minutes, nor were they told to go in a particular order or to a particular website resource. This allowed them to choose what interested them most, and feel a sense of accomplishment by independently learning about the topic.

Once they completed their exploration of the website resources, they were asked to complete a retrospective survey (Appendix C). A retrospective survey is used to determine how they thought they felt before as well as how they thought they felt after the learning experience. In this instance, it was used after a user had gone through various websites pertaining to EFS. The survey consisted of eight identical questions asking the users to determine their level of attitude towards a particular topic learned from the curated website. Keller's ARCS Model (David, 2014) helped link the user's attitudes to these questions. This meaning that the learners attitudes helped drive their confidence, feelings of satisfaction, and overall relevance in their lives currently and in the future. The eight questions included:

1. How confident do you feel in your knowledge about environmentally safe sunscreen?
2. How serious do you think the issue of environmental sunscreen for ocean preservation is?
3. How confident do you feel in your ability to research environmentally safe skincare products?
4. How likely is it that you would direct friends to environmentally safe skincare practices (either online or in person)?
5. How effective do you feel that presenting information and materials on environmentally safe sunscreen and other safe skincare practices online is a form of educating and therefore influencing a person's actions?
6. How relevant do you think preserving ocean environments, such as coral reef, water quality, and fish is to your life?
7. How often will you choose your current sunscreen, or other sun-skincare product, based on its environmental impact?
8. What is your level of interest in learning more about healthcare products, such as skin, hair, and nail impact on the environment?

A separate fill-in question (Figure 7) was part of the retrospective survey to help display information learned about the topic. The question was not a scored question, but helped to motivate the learner to display key ideas and information they had obtained in the experience. The purpose of the project was to bring attention to the topic and motivate learners, not to determine an amount of information learned. Therefore, scoring questions was not necessary.

Do you know the negative impact commonly used sunscreen has on ocean life? *

☐ yes

☐ no

...

If yes, list up to three:

Long answer text

Figure 7. Fill-in Question Representation.

Both the demographic and retrospective surveys included scaled questions between 1-5 (Figure 8), with 1 being a negative answer and 5 being positive.

How often do you wear sunscreen when visiting the beach? *

	1	2	3	4	5	
never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every time

What is your level of interest in environmentally friendly sunscreen? *

	1	2	3	4	5	
not interested at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very interested

Figure 8. Scale rating representation.

Data from both surveys were collected in Google Sheets. The information provided from individuals helped determine if they had grown in their awareness and interest in the topic. If they were able to understand more, they were then able to independently make environmentally friendly sunscreen choices on their own. This information was then grouped and put into graphs. Because this was not a graded assessment, the purpose was to change attitudes on the topic rather than measure the amount of content learned. When look at the data afterwards, comparisons were made to determine apparent relationships among different demographic groups.

Results

The purpose of this instructional design project was to develop and evaluate the effectiveness of a curated website for adults living in Hawai'i and their attitudes about the benefits of sustainable sunscreen and the impact on Hawai'i's natural environment. Using the data collected from both surveys helped compare attitudes of learners before and after the implementation of the website. This section provides an explanation of these results and their relationship to individual's habits.

Demographic Survey The demographic survey results show the relationship between age and personal habits. Adults between the ages of 18-40 visited the beach an average of 4 days per

month. This can be described as almost once a week, since there are usually about 5 weeks in each month. When visiting the beach they rated their sunscreen usage as a 3 on a scale of 1 to 5 (Figure 9). In contrast, adults above the age of 40 visited the beach an average of 2 days per month. This can be described as less than once a week. Additionally, they rated their sunscreen usage as a 2. It can be noted that several of these individuals listed other safe-sun care practices, such as wearing a hat or long sleeve instead of using sunscreen.

Six learners displayed a high level of interest, using a 5 rating scale, about the topic to help start user attitude ratings. They were also asked about their basic knowledge of EFS to determine a baseline of understanding of the topic. Only six learners were able to state simple answers showing a surface level understanding (Figure 11). When asked to describe any action taken in the past to protect the environment while also practicing safe-sun care action, only two users had displayed prior action.

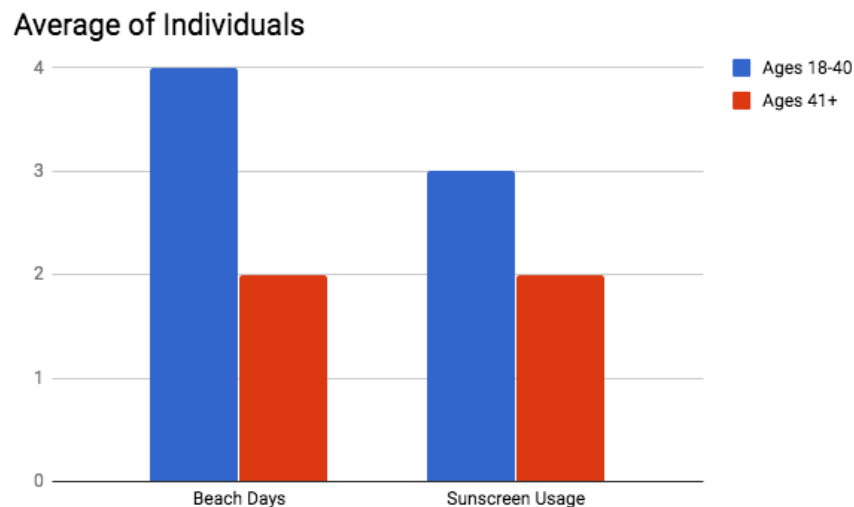


Figure 9. Participant average beach days and sunscreen usage based on age

Retrospective Survey The results of the retrospective survey were sectioned by question to help display users attitude before and after exploring the curated website. Retrospective analyses results in situated accounts of learning that relate learning to the means by which it can be supported and organized (Cobb, Confrey, DiSessa, Lehrer, Schauble, 2003). Because the information was learned and recorded in quick time when users completed both surveys, the results can display the impact the website had on individuals. These results were then compared between the two age groups. The results were intended to show the relationship these two age groups displayed with the information provided in their demographic survey.

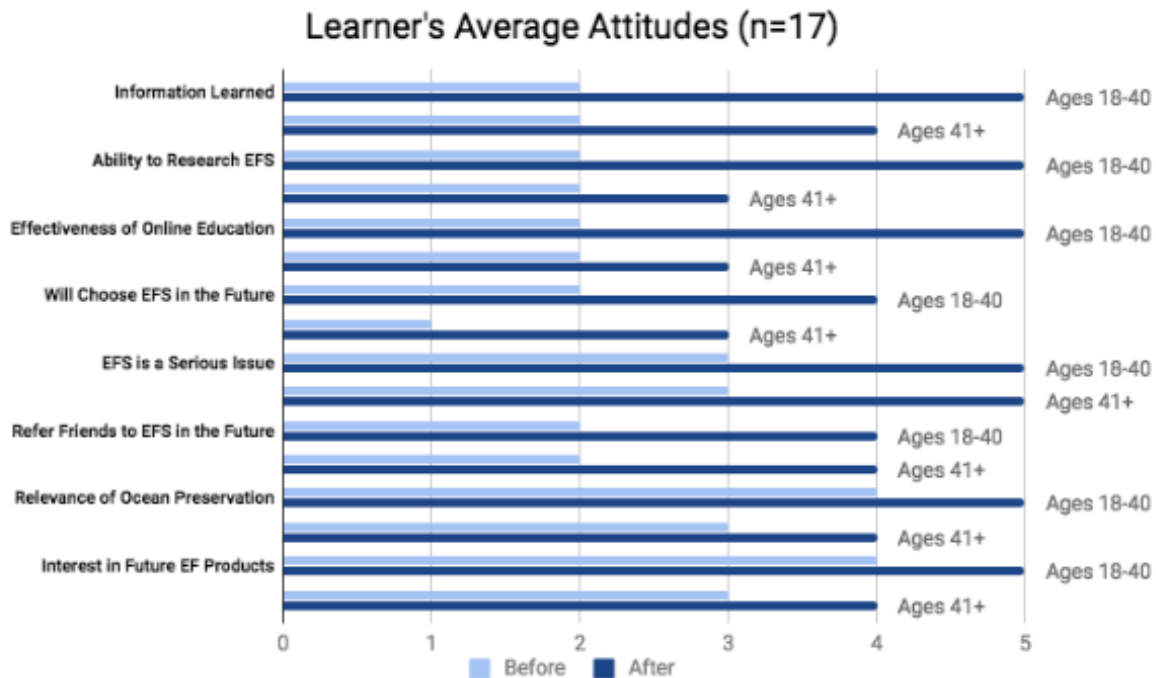


Figure 10. Graphed results of retrospective survey based on age.

It was previously understood that adults between 18-40 visited the beach more frequently and applied sunscreen more often than adults over the age of 40. Therefore, there was a higher relevance factor to the subject of ocean conservation and future EFS research and action. Answers given were averaged to show an overall of each age group. In all eight questions (Figure 10), the younger age group showed higher ratings of attitude both before and after exploring the curated website.

The 18-40 age group described their attitudes as a 5 after visiting the curated website for six questions. Connecting the data to the ARCS Model, this shows the younger demographic expressing higher attitude ratings for relevance in their lives. However, a clear distinction of ratings (4) was shown for satisfaction and confidence through the questions, “How often will you choose your current sunscreen, or other sun-skincare product, based on its environmental impact?” and “How likely is it that you would direct friends to environmentally safe skincare practices (either online or in person)?”. Though there was growth in both areas, it can be noted that other safe-sun care practices, such as wearing a hat or long sleeve instead of using sunscreen as their reasoning for these answers.

A word cloud for both before (Figure 11) and after (Figure 12) exploring the curated website was created to show how participants displayed knowledge about the topic as more than a surface level understanding. Prior to exploring the various websites, users were able to show a surface level understanding of the topic. They did this by typing in the short answer space of words and phrases they could know before. After exploring the websites, there was a stark difference in their knowledge. Instead of just stating words such as “kills” and “toxic” they used higher level understanding through coral bleaching and chemical specific words.



Figure 11. Word cloud on information understood before.



Figure 12. Word cloud on information understood after.

As previously explained, these surveys were not graded due to the focus on attitudes and how they changed. However, there was a section for users to describe what they learned about the topic through key words and phrases. This information was then grouped to show the overall growth learners were able to obtain about the topic.

Discussions and Conclusions

Overall, when looking at the findings of the group as a whole, individuals were both interested in the topic and motivated to make changes whether on their own or through information shared with others. Users had positive feelings towards online learning environments and would be interested in learning about the topic in the future. However, when determining trends in the data collected, it took a considerable amount of time to determine which group best represented trends. Because of this, if there could be improvement, questioning on the demographic survey should be added to help determine more apparent relationships. For example, determining marital status, number of children, and years living in Hawai'i would help. These areas show a more significant personal tie to health of the individual and care for the land they live on. Additionally, the website should have had some more local company resources for users to

locate or purchase throughout the islands. With this information, they could alleviate worry that they might need to shop off island and waste time online. Creating more opportunity for the users to feel a want to make changes in their life was the overall goal, therefore the website and surveys should provide area for that to happen. Creating higher levels of relevance throughout the project would have provided this.

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Appendix A

Consent Form

Consent Form

Aloha, my name is Eve Victor and I am a graduate student at the University of Hawai'i at Manoa, College of Education, Department of Learning Design and Technology. I am currently in my final year of the program and am required to carry out a research project to complete my degree. The purpose of my project is to identify the level of interest and willingness to participate in the use of environmentally safe sunscreen by residents who reside in Hawai'i to further educate them to make changes in the future. As you fit in this demographic, I am asking you to participate in this study.

* Required

Activities and Time Commitment

If you choose to participate in this project, I will schedule a 90 to 120 minute session for you along with one or two other individuals in a public location that is comfortable for you. If for some reason there is a conflict with timing there might be a possibility of a 1:1 session instead. Please be sure to bring your own computer to the session. I will be available for you at the session for any questions or concerns, but do not feel obligated to ask any if you don't need to. You will first take an attitudinal survey, along with a demographic survey. After completing these you will be asked to explore a website I have created to help you access information about this subject. Once you feel you are finished with the website's materials you will then follow up with a final attitudinal survey to determine what you have learned as well as a whether you have had a change in attitude towards the subject. There will also be time for suggestions to improve the learning experience for those using the website in the future.

1. When finished reading please check the box below. *

Check all that apply.

☐ I have read the above material

Benefits and Risks

If you decide to take part in this project, there are no financial or academic benefit. However, as a current resident of Hawai'i, you will gain knowledge of how to protect your skin while also learning environmentally sound preservation habits. Additionally, you will be able to determine current negative impacts you might be making unknowingly.

2. When finished reading please check the box below. *

Check all that apply.

☐ I have read the above material

Privacy and Confidentiality

Any and all information given will be kept a secure location in my home. Once the project is completed the information will be kept on a secure GoogleDrive so it will not be shared with others. My educational advisor, Catherine Fulford, and I will be the only individuals with access during this project. Other agencies that have legal permission to access the information, such as the University of Hawai'i Human Studies Program, have the right to review research records for this study. When results of the project are reported, names will not be used. Personal identification information will not be used to protect your privacy and confidentiality to the extent allowed by law.

3. When finished please check the box below. *

Check all that apply.

☐ I have read the above material

Voluntary Participation

Taking part in this project is completely voluntary, and may be stopped at any time without fear of harm or penalty. Additionally, if you choose not to participate there will be no negative actions taken towards you.

4. When finished please check the box below. *

Check all that apply.

☐ I have read the above material

Contact Information

If you have any questions or concerns regarding this study, please feel free to contact me or my University of Hawai'i faculty advisor, Dr. Catherine Fulford at (808) 956-3906. For any questions regarding your rights as a research participant, please contact the University of Hawai'i at Manoa Office of Research Compliance Human Studies Program at (808) 956-5007 or uhirb@hawaii.edu. To discuss problems, concerns and questions; obtain information; or offer input with an informed individual who is unaffiliated with the specific research protocol.

Please visit <https://www.hawaii.edu/researchcompliance/information-research-participants> for more information on your rights as a research participant.

5. If you agree to participate in this project, please print your name below: *

6. I have read and understand the information provided to me about being in the research project, Safe Sunscreen: An Instructional Design Project. *

Check all that apply.

☐ I consent with my name above

Appendix B

Demographic Survey

Demographic Survey

Aloha! Please complete the survey below. All information collected will be kept private and used to help determine the needs of the instructional website.

* Required

1. Please write your first and last initial:

2. What is your age? *

Mark only one oval.

- ☐ 18-25
- ☐ 26-40
- ☐ 41-55
- ☐ 56+

3. What gender do you identify as? *

Mark only one oval.

- ☐ Male
- ☐ Female
- ☐ Prefer not to specify

4. What Island do you reside on? *

Mark only one oval.

- ☐ Oahu
- ☐ Molokai
- ☐ Lanai
- ☐ Maui
- ☐ Hawai'i
- ☐ Kauai
- ☐ Niihau
- ☐ Other

5. What is your highest achieved education? *

Mark only one oval.

- ☐ High School diploma
- ☐ Trade/technical/vocational training
- ☐ Associate's Degree
- ☐ Bachelor's Degree
- ☐ Master's Degree
- ☐ Doctorate Degree

6. Please fill in the blank: On a given month, I visit the beach about _____ days. *

7. How often do you wear sunscreen when visiting the beach? *

Mark only one oval.

	1	2	3	4	5	
never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every time

8. What is your level of interest in environmentally friendly sunscreen? *

Mark only one oval.

	1	2	3	4	5	
not interested at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very interested

9. Do you know any of the negative impacts commonly used (example: drugstore) sunscreen has on ocean life? *

Mark only one oval.

☐ Yes

☐ No

10. If yes, list up to three:

11. Have you ever taken action to protect your skin while practicing ocean-life preservation? *

Mark only one oval.

☐ Yes

☐ No

12. If yes, which actions?

13. If no, why not?

14. Have you ever chosen your sunscreen, or other sun-skin care, based on it's environmental impact? *

Mark only one oval.

	1	2	3	4	5	
never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every time

15. Have you taken any classes, assessments, or online modules before? *

Mark only one oval.

☐ Yes

☐ No

16. If yes, how many? *

Mark only one oval.

☐ none

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

☐ more than 5

17. How comfortable do you feel using a computer, smartphone, or tablet? *

Mark only one oval.

	1	2	3	4	5	
not very comfortable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very comfortable

18. How do you use technology in your life? Select all that apply: *

Check all that apply.

☐ educational

☐ professional

☐ recreational

☐ Other: _____

Appendix C

Retrospective Survey

Retrospective Survey

Please complete this survey to the best of your ability. It will be used again when you are finished with the online resource provided. The two forms will be used to determine if the information provided has helped to educate you and impact future decisions in your life pertaining to sunscreen habits.

* Required

1. Please write your first and last initial:

2. **BEFORE** the website educational experience: How confident do you feel in your knowledge about environmentally safe sunscreen? *

Mark only one oval.

	1	2	3	4	5	
not very confident	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very confident

3. **AFTER** the website educational experience: How confident do you feel in your knowledge about environmentally safe sunscreen? *

Mark only one oval.

	1	2	3	4	5	
not very confident	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	confident

4. **BEFORE** the website educational experience: How serious do you think the issue of environmental sunscreen for ocean preservation is? *

Mark only one oval.

	1	2	3	4	5	
not serious at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very serious

5. **AFTER** the website educational experience: How serious do you think the issue of environmental sunscreen for ocean preservation is? *

Mark only one oval.

	1	2	3	4	5	
not serious at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very serious

6. Do you know the negative impact commonly used sunscreen has on ocean life? *

Mark only one oval.

☐ yes

☐ no

	1	2	3	4	5	
not very confident	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very confident

	1	2	3	4	5	
not very confident	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very confident

	1	2	3	4	5	
not very likely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very likely

	1	2	3	4	5	
not very likely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very likely

13. **BEFORE** the website educational experience: How effective do you feel that presenting information and materials on environmentally safe sunscreen and other safe skincare practices online is a form of educating and therefore influencing a person's actions? *

Mark only one oval.

	1	2	3	4	5	
not effective at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very effective

14. **AFTER** the website educational experience: How effective do you feel that presenting information and materials on environmentally safe sunscreen and other safe skincare practices online is a form of educating and therefore influencing a person's actions? *

Mark only one oval.

	1	2	3	4	5	
not effective at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very effective

15. **BEFORE** the website educational experience: How relevant do you think preserving ocean environments, such as coral reefs, water quality, and fish to your life? *

Mark only one oval.

	1	2	3	4	5	
not relevant at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very relevant

16. **AFTER** the website educational experience: How relevant do you think preserving ocean environments, such as coral reefs, water quality, and fish to your life? *

Mark only one oval.

	1	2	3	4	5	
not relevant at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very relevant

17. **After** the training, how often will you choose your current sunscreen, or other sun-skin care product, based on it's environmental impact? *

Mark only one oval.

	1	2	3	4	5	
never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every time

18. **Please explain your previous answer: (example: price, convenience, availability, moral obligation, etc.) ***

19. **BEFORE the website educational experience: What is your level of interest in learning more about healthcare products, such as skin, hair, and nail products' impact on the environment? ***

Mark only one oval.

	1	2	3	4	5	
not very interested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very interested

20. **AFTER the website educational experience: What is your level of interest in learning more about healthcare products, such as skin, hair, and nail products' impact on the environment? ***

Mark only one oval.

	1	2	3	4	5	
not very interested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very interested